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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,832	12/26/2001	David W. Morris	PP23698.0001/20366-027001	1729

55255 7590 01/23/2008

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Corporate Intellectual Property
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EXAMINER	
HOLLERAN, ANNE L	
ART UNIT	PAPER NUMBER
1643	

MAIL DATE	DELIVERY MODE
01/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/035,832	MORRIS ET AL.	
	Examiner	Art Unit	
	Anne L. Holleran	1643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20,28,30,32,33,35 and 39-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20,28,30,32,33,35 and 39-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on xxx has been entered.

1. The amendment filed 10/26/2007 is acknowledged. Claims 43-48 were added. Claims 20, 28, 30, 32, 33, 35 and 39-48 are pending and examined on the merits.

Claim Rejections Withdrawn:

2. The rejection of claim 42 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, because claim 42 introduced new matter into the specification as originally filed, is withdrawn in view of applicants' arguments and showing where support may be found in the specification.

3. The rejection of claims 20, 28, 30, 32, 33, 35, and 39-42 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement is withdrawn upon further consideration. However, see new rejection below under 35 USC 112, first paragraph, for lack of enablement.

Claim Rejections Maintained:

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 20, 28, 30, 32, 33, 35, 39-42 and 45-48 remain/are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods of diagnosis of colon cancer comprising the differential detection of PPP3CC *protein* [emphasis added] levels, does not reasonably provide enablement for methods for diagnosing colon cancer, lymphoma, stomach cancer, prostate cancer, breast cancer or carcinoma, comprising either the differential detection of PPP3CC mRNA levels, where the PPP3CC mRNA is defined as a nucleotide sequence of SEQ ID NO: 1587 or a sequence at least 98% identical to SEQ IDNO: 1587. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The basis for this rejection is that the teachings of the specification do not enable the intended use of the claimed methods for the diagnosis of carcinoma (which encompasses any and all carcinomas), colon cancer, lymphoma, prostate cancer, stomach cancer or breast cancer because the specification fails to provide evidence of differential expression of the nucleotide sequence of SEQ ID NO: 1587, or of differential expression of a nucleotide sequence that is at least 98% identical to SEQ ID NO: 1587.

Applicants' arguments have been carefully considered, but fail to persuade.

Applicants state that the Office has failed to identify what is lacking in the present specification or in the knowledge of the person of ordinary skill in the art to allow such a person to practice the claimed invention by comparing levels of mRNA sequences to diagnose cancer; and that the Office has failed to specifically identify any disclosure in Lakshimikuttyamma stating why one could not "extrapolated from the date in Lakshmikuttyamma [based on protein levels] to a method where the diagnosis is based on observations of mRNA levels." Applicants do not agree with the Office's characterization as prophetic the teachings in the specification with respect to the use of PPP3CC mRNA expression and colon cancer, prostate cancer, lymphoma, breast cancer or broadly carcinoma. Applicant points to paragraphs 0023, and 0028 of the specification and notes that the association between PPP3CC and cancer is set forth in the specification, because the specification identifies PPP3CC as a "CA sequence", and that the specification teaches that altered expression of a CA sequence is indicative of specific cancers. Applicants further state that the fact that the specific endpoints claimed by applicants may not be part of a working example in the specification appears irrelevant to enablement, and that there is no requirement in the law for a working example. Applicants assert that there is no reason to believe that one skilled in the art would not be able to practice the claimed inventions. Applicants go on to discuss the previously cited Tockman reference that supported the contention by the Office that the art of cancer diagnosis was unpredictable. Applicants refer to a second Tockman reference (Tockman et al., Clin. Can. Res. 3: 2237-2246, 1997) that according to applicant demonstrates the diagnostic efficacy of an in vitro assay for the up-regulation of a single gene for certain populations at risk for developing lung cancer. However, applicants did not supply this reference for the examiner's consideration. From applicants' description of the

teachings of the second Tockman reference it appears that it does not contain any data or teachings that contradict the assertion that the art of cancer diagnosis is unpredictable. It is noted from applicants' description of the teachings that the Tockman 1997 paper teaches actual data showing that up-regulation of a gene for certain populations at risk for developing lung cancer results in improved lung cancer detection.

Applicants assert that both of the Tockman references provide evidence that those having ordinary skill in the art were able to express confidence in the diagnostic ability of disease markers even in the absence of full-blown clinical trials. Applicants submit that the standard for enablement is not a certainty of success but a reasonable expectation of success.

In response, the basis for the rejection under 35 USC 112, first paragraph for lack of enablement of the claimed inventions is that without a demonstration of even the slightest correlation between expression levels of PPP3CC mRNA, the specification presents an invitation to experiment to determine whether such a correlation exists, and for which cancers, or all cancers. A subset of claims is drawn to methods having the intended use of diagnosing colon cancer, and another subset of claims is drawn to methods having the intended use of diagnosing carcinoma (any type of carcinoma), lymphoma, prostate cancer, stomach cancer and breast cancer. While the examiner agrees with applicant that full-blown clinical trial data is not required to satisfy the enablement requirement, the examiner notes that full-blown clinical trial data has never been requested. Furthermore, the uncertainty in the use of protein or mRNA measurements in the diagnosis of cancer lies in knowing whether the relationship exists or not, not in the actual steps of detection. While the sequences recited in the claims may be detectable in various samples taken from a patient, the basis for using the resulting data has not been

provided either in the specification or the prior art. In the Wands case (See In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988)), in which the factors that are used to assess whether a specification adequately enables a claim, the example that was discusses was whether one of skill in the art could make a monoclonal antibody if in possession of the antigen. Because in this case, one of skill in the art had all of the materials necessary to make a monoclonal antibody (the antigen), and the methods of making the monoclonal antibody were well established by the time of filing of the application, and further because the art of making monoclonal antibodies was a predictable art at the time of filing, the fact that applicants in that case had not actually made a monoclonal antibody was not sufficient to support a rejection under 35 USC 112, first paragraph. In the instant case, the key piece of information that is required to support a claim to a method of diagnosis is whether there is a relationship between up-regulation or down-regulation of an mRNA or protein and a particular disease. This relationship has not been demonstrated by applicants for the inventions as claimed.

For claims 20, 28, 20, 32, 33, 42, the claims are drawn to method of diagnosis of colon cancer comprising the detection of an mRNA that has at least 98% identity to SEQ ID NO: 1587 and wherein this mRNA encodes a polypeptide with protein phosphatase activity. As stated previously, while claims to detection of PPP3CC protein (encoded by SEQ ID NO: 1587) is enabled because Lakshmikuttiyamma (post-filing date reference, cited in a previous Office action) appears to provide evidence that for colon cancer there is differential protein expression. However, the present claims are drawn to methods comprising the detection mRNA levels. Many proteins are regulated at the translational level rather than the transcriptional level. For example, McClean and Hill (Eur J of Cancer, 1993, vol. 29A, pp.2243-2248) teach that p-

glycoprotein can be overexpressed in CHO cells following exposure to radiation, without any concomitant overexpression of the p-glycoprotein mRNA. In addition, Fu et al (EMBO Journal, 1996, Vol. 15, pp. 4392-4401) teach that levels of p53 protein expression do not correlate with levels of p53 mRNA levels in blast cells taken from patients with acute myelogenous leukemia. While Lakshmikuttyamma provides evidence that there is differential protein expression for PPP3CC in colon cancer versus normal colon, it is unpredictable that there is a correlation between changes in protein levels and changes in mRNA levels. Therefore, one of skill in the art would have to engage in undue experimentation to discover if there is a detectable differential expression at the mRNA level between normal and cancerous colon samples.

For claims 35, the claim is drawn to a method of diagnosis of lymphoma, colon cancer, stomach cancer or breast cancer comprising the determining the expression level of SEQ ID NO: 1587, or a full complement thereof, and comparing this measurement to that in a second sample that is one of normal tissue, wherein a difference between the level of the expression product in the first sample compared with the second sample is indicative of lymphoma, colon cancer, stomach cancer or breast cancer. As stated previously, the closest teachings with respect to this claimed invention is the teachings of Kihara or Padma (both cited in a previous Office action), which teaches that a change in calcineurin activity not protein or mRNA levels is associated with leukemia.

For claims 39-42, and new claims 45-48, the claims are drawn to methods of diagnosis of carcinoma, lymphoma, prostate cancer, stomach cancer and breast cancer, or a subset of these cancers, comprising the detection of a expression product that is at least 98% identical to SEQ ID NO: 1587, which encodes a polypeptide with protein phosphatase activity; or detection of a

duplex formed between a polynucleotide that hybridizes under highly stringent conditions to a nucleotide sequence comprising SEQ ID NO: 1587, and nucleic acids from a patient sample. For the reasons given above, the specification does not provide adequate support for these methods.

Therefore, the rejection is maintained for the reasons of record and applied to new claims 45-48.

New Grounds of Rejection:

5. Claims 20, 30, 32, 33, 39, 40-42 and 45-48 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods where the expression product that is detected is an mRNA having a sequence of SEQ ID NO: 1587, does not reasonably provide enablement for methods where the expression product that is detected is an mRNA having a sequence at least 98% identical to SEQ ID NO: 1587, where the mRNA encodes a polypeptide with protein phosphatase activity; or an expression product is one that forms a duplex with a polynucleotide that hybridizes under highly stringent conditions to a nucleotide sequence comprising SEQ ID NO: 1587. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Even if the prior rejection under 112, 1st paragraph is overcome, the following rejection will be applied. The claims are drawn to methods for diagnosing cancer comprising detecting evidence of differential expression of a genus of nucleic acids. Within the genus are nucleic acids having 98% sequence identity with SEQ ID NO: 1587 and encoding a polypeptide with

protein phosphatase activity in a patient sample and polynucleotides that hybridize under highly stringent conditions to a nucleotide sequence comprising SEQ ID NO; 1587.

Factors to be considered in determining whether undue experimentation would be required to practice the full scope of the claimed inventions are: 1) quantity of experimentation necessary; 2) the amount of direction or guidance presented in the specification; 3) the presence or absence of working examples; 4) the nature of the invention; 5) the state of the prior art; 6) the relative skill of those in the art; 7) the predictability or unpredictability of the art; and 8) the breadth of the claims. See In re Wands, 858 F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988).

Because of the broadly recited claims, the methods read on the detection of mutations of PPP3CC nucleic acids and the detection of mutations for the detection of cancer. The specification provides no working examples indicating that mutations of PPP3CC are known, or that any type of mutation is known to be associated with any type of cancer. Therefore, the specification appears to present nothing more than invitation to research to find out whether mutations exist which may be correlated with a cancer phenotype. This situation appears to be analogous to the situation in Brenner v. Manson (148 USPQ 689 (1966) in which the patent protection was sought for compounds having structures that were similar to a compound with a known utility. The courts concluded that "a patent is not a hunting license...[i]t is not a reward for the search, but compensation for its successful conclusion." In the instant case, even if applicant's establish that detection of mRNA having the sequence of SEQ ID NO: 1587 is useful for the diagnosis of cancer, this will not enable the claimed methods because the claimed methods include those that comprising the detection of mRNA having a sequence that is not the same as the polynucleotide sequence of SEQ ID NO: 1587, and the specification has not

provided any data or line of reasoning to demonstrate that sequences having the variability in nucleic acid sequence are associated with any type of cancer.

6. Claims 43 and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The basis for this rejection is that the specification fails to describe the genus of PPP3CC proteins that have greater than 75% sequence identity to the protein encoded by SEQ ID NO: 1587, or a protein encoded by a nucleotide sequence at least 98% identity to a nucleic acid sequence of SEQ IDNO:1587, and that are also diagnostic of carcinoma or diagnostic for a specific cancer. Therefore, the specification lacks adequate written description for the broadly claimed methods.

As discussed above, the specification fails to provide an enabling disclosure for the broadly claimed methods of diagnosing cancer by the detection of differential expression of a polynucleotide of SEQ ID NO: 1587 or a polynucleotide having 98% identity to SEQ ID NO: 1587 and encoding a protein with phosphates activity. The specification fails to provide adequate written description of the genus of PPP3CC protein expression products that are diagnostic of cancer. The term "PPP3CC" protein is interpreted to encompass a genus of proteins, because at page 22 of the specification, CA proteins are defined as having an embodiment of amino acid variants of the naturally occurring sequences, where preferably the variants are greater than about 75% homologous to the wild type sequence.

For a claim drawn to a genus, the written description requirement may be satisfied through sufficient description of a representative number of species by actual reduction to practice or by disclosure of relevant, identifying characteristics, i.e. structure or other physical and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. A "representative number of species" means that the species, which are adequately described, are representative of the entire genus. Thus, when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus (see Official Gazette 1241 OG 174, January 30, 2001). In the instant case, there is substantial variation in the genus for the broad claims, because a PPP3CC protein may be interpreted as having greater than 75% sequence identity to a protein encoded by SEQ ID NO: 1587. For the narrower claims that recite 98% sequence identity, the specification also fails to provide support because while the protein encoded by SEQ ID NO: 1587 may be diagnostic of colon cancer, there is no evidence or line of reasoning presented in the specification that any variants of such proteins are diagnostic of colon cancer. Therefore, applicant does not appear to be in possession of the broadly claimed methods.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 30, 35, 39, 42-46 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 30 and 39 are indefinite because of the "known normal tissue" or "known sample comprising normal tissue". The word "known" is a relative term. Known by whom? Thus, the scope of the claims is unclear.

Claim 35 is indefinite because in step "a" one is determining the level of an expression product, for the gene is not specified. Furthermore, while the nucleotide sequence of SEQ ID NO: 1587 may be the expression product of a particular gene, its full complement is not an expression product of the same gene.

Claim 42 is indefinite because it refers to an expression product that has "the same expression profile as SEQ ID NO: 1587". This appears to be incorrect usage of the phrase "expression profile", which is a phrase used to denote the expression levels found in a particular sample of a plurality of genes or proteins. The specification appears to use this phrase to describe measurements done on a sample, and not as a property of a particular gene or protein (see page 33, lines 9-20).

Claims 43 and 44 are indefinite because they are method comprising the steps of "comparing" levels of a polypeptide in a patient colon sample, where the comparison sample is not specified.

Claim 45 is indefinite because of the phrase "highly stringent conditions". This phrase is defined in the specification with an open definition that cites examples of such conditions.

However, these examples do not provide the metes and bounds of the polynucleotide genus that is used in the claimed methods.

Claims 39, 45 and 46 are indefinite because the method of diagnosing is for "...prostate, stomach *and* breast cancer", when possibly applicant intends prostate, stomach *or* breast cancer. The specification does not teach or suggest that individuals will have all of these cancers at the same time.

Claim 48 is indefinite because it lacks antecedent basis for "colon cancer". Claim 45 or 46, from which claim 48 depends in the alternative, does not recite colon cancer, but instead recites prostate, stomach and breast cancer.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 43 and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by McGarrity (McGarrity, T.J. et al., Gut, 32: 1121-1126, 1991) as evidenced by Billingsley (Billingsley, M.L. et al., Proc. Natl. Acad. Sci., USA, 82: 7585-7589, 1985).

Claims 43 and 44 are drawn to methods comprising the detection of a PPP3CC protein in a patient colon sample. The intended use of the method is to diagnose colon cancer. However, the intended use does not appear to affect the nature of the method steps.

McGarrity teaches detection of a 67kDa calmodulin-binding protein in human colon and colon cancer samples (see Figure 2). McGarrity teaches that this 67 kDa protein may be calcineurin, which is another name for PPP3CC. Billingsley teaches that human calcineurin appears to have a molecular weight of about 61 kDa (see abstract). However, in Figure 3, (page 7588, it appears using the same method as that used in McGarrity, that standard calcineurin has a molecular weight close to 67 kDa (see Figure 3, lane 8 and legend). Therefore, absent evidence to the contrary it appears that McGarrity teaches a method that is the same as that claimed.

9. Claims 35, 39-42, and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Bertucci (US 2003/0143539 A1; published Jul. 31, 2003; effective filing date is Dec. 7, 2001).

Please note that for this rejection the priority date for the instant application is December 20, 2001 (filing date of 10/034,650), because there does not appear to be support for SEQ ID NO: 1587 in the following CIP applications: 09/997,722, 10/052,482; 10/004,113, 09/798,586, or 09/747,377.

Bertucci teaches a sequence that is identical to the sequence of SEQ ID NO: 1587 (see the following alignment).

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US-10-007-926A-19
; Sequence 19, Application US/10007926A
; Publication No. US20030143539A1
; GENERAL INFORMATION:
;  APPLICANT: BERTUCCI, FRANCOIS
;  APPLICANT:  HOULGATTE, REMI
;  APPLICANT:  BIRNBAUM, DANIEL
;  APPLICANT:  NGUYEN, CATHERINE
;  APPLICANT:  VIENS, PATRICE
;  APPLICANT:  FERT, VINCENT
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;  TITLE OF INVENTION: GENE EXPRESSION PROFILING OF PRIMARY BREAST CARCINOMAS
;  TITLE OF INVENTION:  USING ARRAYS OF CANDIDATE GENES
;  FILE REFERENCE: 1546-R-00
;  CURRENT APPLICATION NUMBER: US/10/007,926A
;  CURRENT FILING DATE:  2001-12-07
;  PRIOR APPLICATION NUMBER: 60/254,090
;  PRIOR FILING DATE: 2000-12-08
;  NUMBER OF SEQ ID NOS: 468
;  SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 19
;   LENGTH: 2134
;   TYPE: DNA
;   ORGANISM: Homo sapiens
;   FEATURE:
;   OTHER INFORMATION: protein phosphatase 3 (formerly 2b),
;   OTHER INFORMATION: catalytic subunit, gamma isoform (calcineurin a
;   OTHER INFORMATION: gamma) (PPP3CC) gene.
US-10-007-926A-19

  Query Match             100.0%;  Score 2134;  DB 8;  Length 2134;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 2134;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 GGGCCACCCTTAGCAGCGGTCGCGGTCGGTGCCGAAGCGGTGTTCCCCGCCTTAGCCGCT 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 GGGCCACCCTTAGCAGCGGTCGCGGTCGGTGCCGAAGCGGTGTTCCCCGCCTTAGCCGCT 60

Qy         61 GCGCCTCCCAAGAGAGCGGCCGGTGGGCCCTCGTCCTGTCAGTGGCGTCGGAGGCCGGCC 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy        121 TGCGGTGGCCGCGCCCTTCTGGTGCTCGGACACCGCTGAGGAGCCGGGGCCGGGCACGGC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TGCGGTGGCCGCGCCCTTCTGGTGCTCGGACACCGCTGAGGAGCCGGGGCCGGGCACGGC 180

Qy        181 TGGCTGACGGCTCCGGGCAGCTAAGGCTGCCCGAGGAGAAGGCGGCGGCCGCGGCGTAGG 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 TGGCTGACGGCTCCGGGCAGCTAAGGCTGCCCGAGGAGAAGGCGGCGGCCGCGGCGTAGG 240

Qy        241 CGCACGTCCGGCGGGCTCCTGGAGCCTGGAGGAGGCCGAGGGGACCATGTCCGGGAGGCG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 CGCACGTCCGGCGGGCTCCTGGAGCCTGGAGGAGGCCGAGGGGACCATGTCCGGGAGGCG 300

Qy        301 CTTCCACCTCTCCACCACCGACCGCGTCATCAAAGCTGTCCCCTTTCCTCCAACCCAACG 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 CTTCCACCTCTCCACCACCGACCGCGTCATCAAAGCTGTCCCCTTTCCTCCAACCCAACG 360

Qy        361 GCTTACTTTCAAGGAAGTATTTGAGAATGGGAAACCTAAAGTTGATGTTTTAAAAAACCA 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 GCTTACTTTCAAGGAAGTATTTGAGAATGGGAAACCTAAAGTTGATGTTTTAAAAAACCA 420

Qy        421 TTTGGTAAAGGAAGGACGACTGGAAGAGGAAGTAGCCTTAAAGATAATCAATGATGGGGC 480
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Db        421 TTTGGTAAAGGAAGGACGACTGGAAGAGGAAGTAGCCTTAAAGATAATCAATGATGGGGC 480

Qy        481 TGCCATCCTGAGGCAAGAGAAGACTATGATAGAAGTAGATGCTCCAATCACAGTATGTGG 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 TGCCATCCTGAGGCAAGAGAAGACTATGATAGAAGTAGATGCTCCAATCACAGTATGTGG 540

Qy        541 TGATATTCATGGACAATTCTTTGACCTAATGAAGTTATTTGAAGTTGGAGGATCACCTAG 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 TGATATTCATGGACAATTCTTTGACCTAATGAAGTTATTTGAAGTTGGAGGATCACCTAG 600

Qy        601 TAACACACGCTACCTCTTTCTGGGTGACTATGTGGACAGAGGCTATTTCAGTATAGAGTG 660
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 TAACACACGCTACCTCTTTCTGGGTGACTATGTGGACAGAGGCTATTTCAGTATAGAGTG 660
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Qy        661 TGTGCTGTATTTATGGAGTTTAAAGATTAATCATCCCAAAACATTGTTTCTGCTTCGGGG 720
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 TGTGCTGTATTTATGGAGTTTAAAGATTAATCATCCCAAAACATTGTTTCTGCTTCGGGG 720

Qy        721 AAATCATGAATGCAGGCATCTTACAGACTATTTCACCTTCAAACAGGAATGTCGAATCAA 780
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 AAATCATGAATGCAGGCATCTTACAGACTATTTCACCTTCAAACAGGAATGTCGAATCAA 780

Qy        781 ATATTCGGAACAGGTGTATGATGCCTGTATGGAGACATTTGACTGTCTTCCTCTTGCTGC 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 ATATTCGGAACAGGTGTATGATGCCTGTATGGAGACATTTGACTGTCTTCCTCTTGCTGC 840

Qy        841 CCTCTTAAACCAGCAGTTTCTCTGTGTACATGGAGGAATGTCACCTGAAATTACTTCTTT 900
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 CCTCTTAAACCAGCAGTTTCTCTGTGTACATGGAGGAATGTCACCTGAAATTACTTCTTT 900

Qy        901 AGATGACATTAGGAAATTAGACAGGTTTACGGAACCTCCCGCCTTTGGACCTGTGTGTGA 960
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 AGATGACATTAGGAAATTAGACAGGTTTACGGAACCTCCCGCCTTTGGACCTGTGTGTGA 960

Qy        961 CCTGCTTTGGTCTGATCCCTCAGAGGATTATGGCAATGAGAAGACCTTGGAGCACTATAC 1020
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 CCTGCTTTGGTCTGATCCCTCAGAGGATTATGGCAATGAGAAGACCTTGGAGCACTATAC 1020

Qy       1021 CCACAACACTGTCCGAGGGTGCTCTTATTTCTACAGTTACCCTGCAGTTTGTGAATTTTT 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 CCACAACACTGTCCGAGGGTGCTCTTATTTCTACAGTTACCCTGCAGTTTGTGAATTTTT 1080

Qy       1081 GCAGAACAATAATTTACTATCAATTATCAGAGCCCATGAAGCCCAAGATGCTGGGTATCG 1140
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 GCAGAACAATAATTTACTATCAATTATCAGAGCCCATGAAGCCCAAGATGCTGGGTATCG 1140

Qy       1141 AATGTACAGGAAGAGCCAAGCCACAGGCTTTCCATCACTTATTACAATTTTCTCTGCCCC 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1141 AATGTACAGGAAGAGCCAAGCCACAGGCTTTCCATCACTTATTACAATTTTCTCTGCCCC 1200

Qy       1201 CAATTACCTAGATGTCTATAACAATAAAGCTGCTGTGTTGAAATATGAAAACAATGTCAT 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1201 CAATTACCTAGATGTCTATAACAATAAAGCTGCTGTGTTGAAATATGAAAACAATGTCAT 1260

Qy       1261 GAATATCAGGCAGTTTAACTGTTCTCCACACCCCTACTGGCTTCCAAACTTTATGGATGT 1320
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1261 GAATATCAGGCAGTTTAACTGTTCTCCACACCCCTACTGGCTTCCAAACTTTATGGATGT 1320

Qy       1321 TTTCACATGGTCTTTGCCTTTTGTTGGGGAAAAAGTCACAGAGATGCTGGTAAATGTGCT 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1321 TTTCACATGGTCTTTGCCTTTTGTTGGGGAAAAAGTCACAGAGATGCTGGTAAATGTGCT 1380

Qy       1381 CAACATATGCTCTGATGACGAACTGATTTCTGATGATGAAGCAGAAGGAAGCACTACAGT 1440
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1381 CAACATATGCTCTGATGACGAACTGATTTCTGATGATGAAGCAGAAGGAAGCACTACAGT 1440

Qy       1441 TCGTAAGGAGATCATCAGGAATAAGATCAGAGCCATTGGGAAGATGGCACGGGTCTTTTC 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1441 TCGTAAGGAGATCATCAGGAATAAGATCAGAGCCATTGGGAAGATGGCACGGGTCTTTTC 1500

Qy       1501 AATTCTTCGGCAAGAAAGTGAGAGTGTGCTGACTCTCAAGGGCCTGACTCCCACAGGCAC 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1501 AATTCTTCGGCAAGAAAGTGAGAGTGTGCTGACTCTCAAGGGCCTGACTCCCACAGGCAC 1560

Qy       1561 ACTCCCTCTGGGCGTCCTCTCAGGAGGCAAGCAGACTATCGAGACAGCCATCAGAGGGTT 1620
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1561 ACTCCCTCTGGGCGTCCTCTCAGGAGGCAAGCAGACTATCGAGACAGCCATCAGAGGGTT 1620

Qy       1621 CTCGCTTCAGCACAAGATCCGGAGTTTTGAAGAAGCGCGAGGTCTGGACCGAATTAATGA 1680
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1621 CTCGCTTCAGCACAAGATCCGGAGTTTTGAAGAAGCGCGAGGTCTGGACCGAATTAATGA 1680
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Qy       1681 GCGAATGCCACCCCGAAAGGATAGCATATACCCTGGTGGGCCAATGAAATCTGTAACCTC 1740
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1681 GCGAATGCCACCCCGAAAGGATAGCATATACCCTGGTGGGCCAATGAAATCTGTAACCTC 1740

Qy       1741 AGCACACTCACATGCTGCGCACAGGAGCGACCAAGGGAAGAAAGCCCATTCATGACTTAG 1800
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1741 AGCACACTCACATGCTGCGCACAGGAGCGACCAAGGGAAGAAAGCCCATTCATGACTTAG 1800

Qy       1801 AGTCCTGCCGTGCTCAGGTGGATCTAAAACTCAAGAACAAATTCTATTTATTTATTATTG 1860
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1801 AGTCCTGCCGTGCTCAGGTGGATCTAAAACTCAAGAACAAATTCTATTTATTTATTATTG 1860

Qy       1861 GAAAATGAAAAGCAACTCAAAACAACTTCAACCTGGAGGTGCATTTATAATTCAGTCTGC 1920
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1861 GAAAATGAAAAGCAACTCAAAACAACTTCAACCTGGAGGTGCATTTATAATTCAGTCTGC 1920

Qy       1921 ATTTATTCTGTAAAAAGGTGACTGTTTTATAAATTCTTTTAATTTATGTTCAATATATAT 1980
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1921 ATTTATTCTGTAAAAAGGTGACTGTTTTATAAATTCTTTTAATTTATGTTCAATATATAT 1980

Qy       1981 AAAAAGTGCATCTGTTTTGTTTTTCCCTTTTTTCTCCATAATTTTAAGAAATGAATCTGA 2040
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1981 AAAAAGTGCATCTGTTTTGTTTTTCCCTTTTTTCTCCATAATTTTAAGAAATGAATCTGA 2040

Qy       2041 TTGTTGTCAACACATTTGTGAAGTCTTGTGCTATAAAGGGGAACTTCCCCTAATAAAAGG 2100
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2041 TTGTTGTCAACACATTTGTGAAGTCTTGTGCTATAAAGGGGAACTTCCCCTAATAAAAGG 2100

Qy       2101 GCCTTGGAAACCTCAAACCTGGGTTTCTGACCCC 2134
             |||||||||||||||||||||||||||||||||
Db       2101 GCCTTGGAAACCTCAAACCTGGGTTTCTGACCCC 2134
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Bertucci teaches detecting this sequence in samples of breast tissue for the detection of breast cancer (see claim59-69, especially claim 67, and Figures 1-3 and paragraph 0014). Therefore, Bertucci teaches a method that is the same as that claimed.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne Holleran, whose telephone number is (571) 272-0833. The examiner can normally be reached on Monday through Friday from 9:30 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry

Helms, can be reached on (571) 272-0832. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Papers related to this application may be submitted to Group 1600 by facsimile transmission. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Official Fax number for Group 1600 is (571) 273-8300.

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January 21, 2008

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